

Abstract

Probe cards for measuring package interconnect impedance. A first probe card includes a package having solder balls on a first surface, and an electrically conductive material on a second surface. The electrically conductive surface is configured to 5 electrically contact bumps on the substrate. The solder balls are mountable to a test head inter phase board of the tester. The probe card does not have any probe pins, and is configured to make electrical contact with bumps on the substrate without using probe pins. A second probe card includes a substrate with solder balls on one side and solder on 10 pad (SOP) on the other side. Vertical probe pins contact the SOP and act as an interface between a tester and solder bumps on a wafer.